

## USC neuroscientists awarded \$9 million to map gene expression during human brain development

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Two University of Southern California (USC) neuroscientists have been awarded nearly \$9 million in American Recovery and Reinvestment Act funds to map how genes are expressed in different regions of the human brain throughout development.

The two-year grant, part of the Grand Opportunities grant program, funded through the National Institutes of Mental Health (NIMH), will allow researchers to use cutting-edge DNA sequencing and profiling technologies to create an atlas of when and where thousands of genes are expressed during key periods of development. The findings will be freely accessible to scientists worldwide and provide a foundation for discovering the origins of mental disorders.

James A. Knowles, M.D., Ph.D., professor of psychiatry at the Keck School of Medicine of USC, and Pat Levitt, Ph.D., director of the Zilkha Neurogenetic Institute at the Keck School of Medicine, will lead the project in collaboration with researchers at Yale University and the Allen Institute for [Brain](#) Science in Seattle, Wash.

"This project will allow us to document which individual genes and sets of genes are turned on and off in different brain regions through the whole developmental time period," said Knowles, the principal investigator on the project. "This information is essential for understanding normal and abnormal brain development."

Mental disorders such as autism and schizophrenia are increasingly recognized as [brain disorders](#) that have their origins during development. However, relatively little is currently known about how specific [genes](#) regulate human [brain development](#), Knowles noted.

"Breaking through the mysteries of the developing human brain and the origins of mental illnesses requires a very large, collaborative effort," co-principal investigator Levitt said. "We are so pleased to be part of an esteemed group of scientists that will produce more information on the human brain than ever before. This will lead to new breakthroughs in determining disease risk and prevention."

Researchers at USC and partner institutions will sequence the genomes from hundreds of brain samples in order to create a three-dimensional, Web-based model that can be used by scientists all over the world as a basis for future neuroscience research.

"This will provide investigators with a fantastically rich resource for future research," Knowles said.

Source: University of Southern California ([news](#) : [web](#))

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